

UNITED STATES PATENT APPLICATION

OF

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FOR

LAUNDRY DRYER

[0001] This application claims the benefit of Korean Application No. 10-2002-0075982 filed on December 2, 2002, which is hereby incorporated by reference.

BACKGROUND OF THE INVENTION

5 Field of the Invention

[0002] The present invention relates to a laundry dryer, and more particularly, to a laundry dryer employing a unified sealing means in an entrance sealing assembly of the laundry dryer.

Discussion of the Related Art

10 [0003] Generally speaking, a laundry dryer performs the drying of laundry using hot air circulating within a sealed space, which is in essence a drum having an entrance provided with a hinged door for accessing the drum. Typically, the door is provided with a glass window for observing the status of the drum's interior. During drying, hot and humid air is contained under an airtight seal between the various components of the laundry dryer, 15 including the door, the glass window of the door, and components forming the front surface of the drum. Such a laundry dryer is illustrated in FIG. 1.

20 [0004] Referring to FIG. 1, a laundry dryer comprises a cabinet frame 11 forming the body of the laundry dryer and a frame cover 14 forming the front surface of the cabinet and having an entrance hole where a door frame 15 is installed. The door frame 15 has a door glass 15a through which a user can observe the state of drying. A drum 20 is mounted within the cabinet frame 11, and the front side of the drum is secured to the frame cover 14 using a front support 22 coupled to the frame cover.

[0005] During operation, the air circulating within the closed space, formed by the door frame 15 and door glass 15a closing the entrance hole of the frame cover 14 connected to

the front support 22, may escape through gaps between the above-mentioned components of the laundry dryer. Accordingly, a laundry dryer according to a related art is provided with a door sealing assembly, as shown in FIG. 2.

[0006] Referring to FIG. 2, a door sealing assembly is provided three separate seals or gaskets for establishing an airtight seal between respective components, namely, a first sealing member 41 for sealing a gap between the door frame 15 and door glass 15a, a second sealing member 42 for sealing a gap between the door frame 15 and a frame cover panel 14a of the frame cover 14, and a third sealing member 43 for sealing a gap between the frame cover panel and a front support panel 22a of the front support 22. In doing so, however, three distinctly shaped sealing members are required, which complicates fabrication and increases production costs accordingly. Moreover, with the use of multiple sealing members, there is an inherent increase in the probability of a leak to occur.

SUMMARY OF THE INVENTION

[0007] Accordingly, the present invention is directed to a laundry dryer that substantially obviates one or more of the problems due to limitations and disadvantages of the related art.

[0008] An object of the present invention, which has been devised to solve the foregoing problem, lies in providing a laundry dryer, by which the sealing properties of an entrance sealing assembly are improved while simplifying fabrication and reducing production cost.

[0009] It is another object of the present invention to provide a laundry dryer having an entrance sealing assembly in which a unified sealing member is used to perform the necessary sealing actions.

[0010] Additional features and advantages of the invention will be set forth in the description which follows, and in part will be apparent to those having ordinary skill in the art upon examination of the following or may be learned from a practice of the invention. The objectives and other advantages of the invention will be realized and attained by the subject 5 matter particularly pointed out in the specification and claims hereof as well as in the appended drawings.

[0011] To achieve these objects and other advantages in accordance with the present invention, as embodied and broadly described herein, there is provided a laundry dryer having an entrance sealing assembly for a hinged door. The laundry dryer comprises a door frame, 10 the door frame being provided with a door glass; a frame cover having a frame cover panel in which an entrance hole is formed for receiving the door frame, the frame cover panel having an inner end surface; a front support, coupled with the frame cover, for supporting a drum, the front support having an inner end surface; and a unified sealing member having first and second ends, disposed between the frame cover and the front support, the second end of the 15 unified sealing member providing for contact with the door glass when the hinged door is closed.

[0012] It is to be understood that both the foregoing explanation and the following detailed description of the present invention are exemplary and illustrative and are intended to provide further explanation of the invention as claimed.

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BRIEF DESCRIPTION OF THE DRAWINGS

[0013] The accompanying drawings, which are included to provide a further understanding of the invention and are incorporated in and constitute a part of this application, illustrate embodiment(s) of the invention and together with the description serve to explain

the principle of the invention. In the drawings:

- [0014] FIG. 1 is an exploded perspective view of a general laundry dryer;
- [0015] FIG. 2 is a cross-sectional view of an entrance sealing assembly of a laundry dryer according to a related art;
- 5 [0016] FIG. 3 is a cross-sectional view of an entrance sealing assembly of a laundry dryer according to the present invention; and
- [0017] FIG. 4 is a cross-sectional view of the sealing member of FIG. 3.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

- 10 [0018] Reference will now be made in detail to the preferred embodiment of the present invention, examples of which are illustrated in the accompanying drawings.
- [0019] Referring to FIG. 3, a laundry dryer according to the present invention is provided with a frame cover 52 having a frame cover panel 52a having a rolled inner end 52b, a door frame 51 with a door glass 51a, a front support 53 having a front support panel 53a, a 15 unified sealing member 54, and a fixing bar 55. The frame cover 52, which provides the front cover of the cabinet frame (shown in FIG. 1) and is coupled to the front support 53, has an entrance hole for receiving the door frame 51 with the door glass 51a through which a user may observe the state of drying. The front support 53 provides support for the front end of the drum (shown in FIG. 1) to be mounted to the frame cover 52. The unified sealing member 54 is a single gasket piece, disposed between inner end surfaces of the frame cover panel 52a of the frame cover 52 and the front support panel 53a of the front support 53, for sealing a gap between the frame cover and the support cover. One end of the unified sealing member 54 is installed between the inner end surfaces of the frame cover panel 52a and support cover panel 53a, and the other end provides for contact with the door glass 51a.

[0020] Referring to FIG. 4, the unified sealing member 54 comprises a head portion 54a, installed between the inner end surfaces of the frame cover panel 52a and support cover panel 53a, for sealing the gap between the frame cover 52 and the front support 53; and a tail portion 54b, opposite the head portion, for sealing the gap between the door glass 51a and the frame cover by being brought into contact with the door glass when the door of the laundry dryer is closed. The head portion 54a is formed to be partially inserted in a hooked inner end 52b of the frame cover panel 52a, which is bent back toward the support frame panel 53a. The tail portion 54b of the sealing member 54 is pliant so as to be deformed over a predetermined length to establish a planar contact with the door glass 51a, thus sealing the gap between the door glass and the frame cover 52 when the door frame 51 is in a closed position.

[0021] The unified sealing member 54, as the essential element of an entrance sealing assembly of a hinged door of a laundry dryer, provides an airtight seal to a plurality of gaps between various components of a laundry dryer adopting the entrance sealing assembly of the present invention. These gaps include those sealed by the sealing member of the related art as described with reference to FIGS. 1 and 2, namely, the gap between the door frame 51 and door glass 51a, the gap between the door frame and frame cover 52, and the gap between the frame cover 52 and front support 53. The gap between the frame cover 52 and front support 53 is sealed by the head portion 54a of the unified sealing member 54, which is inserted in the hooked inner end 52b of the frame cover panel 52a to increase the sealing effect. With the closing of the door, the tail portion 54b of the unified sealing means 54 seals the gap between the frame cover 52 and the door glass 51a, rendering unnecessary any additionally sealing of gaps between the door glass and the door frame 51, between the door frame and the frame cover, and between the door frame and the front support 53. In other words, a complete

sealing of all gaps between the essential components of the entrance sealing assembly of a laundry dryer adopting the present invention is achieved by the unified sealing member 54, one end of which is installed between the inner end surfaces of the frame cover panel 52a and the support cover panel 53a such that the other end, i.e., the tail portion, is brought into 5 contact with the door glass 51a by a closing of the door. Accordingly, the reduced number of sealing members improves the sealing properties of the door sealing assembly, simplifies fabrication, and reduces production cost.

[0022] It will be apparent to those skilled in the art that various modifications and variations can be made in the present invention without departing from the spirit or scope of 10 the invention. Thus, it is intended that the present invention cover such modifications and variations, provided they come within the scope of the appended claims and their equivalents.